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10/551,279

09/27/2005

Ken Tatebe

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/551,279  
Filing Date: September 27, 2005  
Appellant(s): TATEBE ET AL.

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Peter T. deVore  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 12/08/2010 appealing from the Office action mailed 06/10/2010.

Art Unit: 1773

**(1) Real Party in Interest**

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The following is a list of claims that are rejected and pending in the application:

Claims 1 & 4-7.

**(4) Status of Amendments After Final**

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

**(5) Summary of Claimed Subject Matter**

The examiner has no comment on the summary of claimed subject matter contained in the brief.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN

Art Unit: 1773

REJECTIONS.” New grounds of rejection (if any) are provided under the subheading “NEW GROUNDS OF REJECTION.”

**(7) Claims Appendix**

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant’s brief.

**(8) Evidence Relied Upon**

JP 2001-165930

Tatebe et al.

6-2001

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 1773

Claims 1 & 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tatebe et al. (Japanese Patent Application No. Hei 11-352306, JP 2001-165930; see English translated version).

Regarding Claims 1 & 6, Tatebe et al. disclose a test paper (e.g., test strip, Abstract & P10/[0008]/L4) comprising a porous membrane (Abstract & P10/[0008]/L13 & 17) having a function of separating an object that should be filtered out from a sample by filtration and carrying thereon a reagent (P3/Claim 1) capable of giving a color by reaction with a specified component in the sample (P5/Claim 8 & P16/[0018]/L1),

- wherein said porous membrane has a first layer having a surface to which a sample is supplied (Abstract & P10/[0008]/L12-15) and a second layer having a surface at which the sample is percolated and measured (Abstract & P10/[0008]/L16-P11/[0008]/L1),
- said first layer being made of large-sized pore portions (P10/[0008]/L13-15), with a surface of said first layer being a smooth surface having apertures thereat (e.g., porous, P10/[0008]/L13), said second layer being made of small-sized pore portions (P10/[0008]/L17-18), with a surface of said second layer having apertures thereat (e.g., porous, P10/[0008]/L17),
- wherein said first layer and said second layer are integral with each other and are not separate layers stacked together (see P20/L4-5, “the first and second layers may be bonded together with an adhesive or may be fusion-bonded with each other”), and

Art Unit: 1773

- wherein said porous membrane has a thickness of 50 to 200  $\mu\text{m}$  (P3/Claim 2, P4/Claim 3, P11/[0009]/L4 & 12) and a porosity of 60 to 95% (P3/Claim 2, P4/Claim 3, P11/[0009]/L5 & 13), said first layer has an average pore size of 0.5 to 10  $\mu\text{m}$  (P3/Claim 2 & P11/[0009]/L3, 3 to 10  $\mu\text{m}$ ) in the surface thereof, and said first layer is located from the surface of said first layer within a range of 1/5 to 1/2 of a thickness of said porous membrane (see P11/[0009]), and said second layer has an average pore size of 0.1 to 3.0  $\mu\text{m}$  (P4/Claim 3 & P11/[0009]/L11-12, 0.1 to 2  $\mu\text{m}$ ) in the surface thereof.

Regarding Claims 1 & 6, Tatebe et al. disclose all of the claim limitations as set forth above. While Tatebe et al. do not explicitly disclose the second layer surface having glossiness of not higher than 11 according to JIS Z8741, the change in the surface glossiness is not considered to confer patentability to the claims. Tatebe et al. utilize optical measurement (e.g., spectrophotometer, P25/[0038]/L5) and light reflection absorbance at the surface of the membrane (P25/[0038]/L7-P26/[0038]/L1) are measured, where the results are determined by change in reflection. Therefore the surface glossiness or the surface reflectivity is a variable that can be modified, among others, by varying the surface of the material used. For that reason, the surface, and membrane material, would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the surface glossiness cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the membrane in the apparatus of Tatebe et al. to obtain the desired surface

Art Unit: 1773

glossiness according to JIS Z8741 not higher than 11 (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

In addition, in regards to the section density limitations, it is noted that Tatebe et al. disclose properties of the membrane (i.e., thickness, porosity, pore size) in which are related to the density of the membrane. As such, said limitations have been implicitly disclosed. In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made to alter the membrane property (i.e., density) to modify, such as, filtering components and flow rates, to meet the experimental needs. It is noted that as the density, porosity, pore size, thickness are variables that can be modified, among others, by adjusting said density of the membrane the precise coating thickness would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed density cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the density of the membrane of to obtain the desired operation efficiency (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

Further, in regards to the first layer and the second layer together constitute a single membrane portion formed by a single casting operation, it would have been obvious to one

Art Unit: 1773

having ordinary skill in the art at the time the invention was made to make the layers integrally to ease handling of the device. It is noted that the use of a one piece construction instead of the structure disclosed in prior art would be merely a matter of obvious engineering choice., see *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965) & MPEP 2144. In addition, regarding limitations recited above, which are directed to method of making the single membrane (e.g., “formed by a single casting operation”), it is noted that said limitations are given little patentable weight in the product claims. Even though a product-by-process is defined by the process steps by which the product is made, determination of patentability is based on the product itself and does not depend on its method of production. *In re Thorpe*, 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). As the court stated in *Thorpe*, 777 F.2d at 697, 227 USPQ at 966 (The patentability of a product does not depend on its method of production. *In re Pilkington*, 411 F.2d 1345, 1348, 162 USPQ 145, 147 (CCPA 1969). If the product in a product-by-process claim is the same or obvious as the product of the prior art, the claim is unpatentable even though the prior art product was made by a different process.). See MPEP 2113 and 2114. Therefore, since the membrane as recited in claims 1 and 6 is the same as the membrane disclosed by *Tatebe et al.*, as set forth above, the claim is unpatentable even though it was made by a different process. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

Regarding Claims 4, 5 & 7, *Tatebe et al.* disclose all of the claim limitations as set forth above. In addition, *Tatebe et al.* disclose the test paper wherein:

- a material for said porous membrane is made of polyether sulfone (P11/[0010]/L4),



Art Unit: 1773

- said sample is a blood and said object that should be filtered out contains blood cells (P12/[0010]/L1-3), and
- a ratio between the average pore size in the surface of said first layer and the average size in the surface of said second layer is in the range of 1 to 6 (P11/[0009]/L5-17).

#### **(10) Response to Argument**

Appellants argue the range disclosed in the Japanese publication refers to the average pore size in the entire first/second layer and not the average pore size in the surface of the first/second layer as recited. It is noted that an average taken from the entirety of a layer includes the surface, therefore the teachings of the Japanese publication read on the limitation.

Regarding the average pore size of the first/second layer, the claim states relative pore size, such as "large-sized" & "small-sized" whose section density is either 40% or less or more. It is noted that Tatebe et al. disclose properties of the membrane (i.e., thickness, porosity, pore size, see e.g., claim 2) in which are related to the density of the membrane. In addition, the reference teaches the first layer has a greater average pore size & the second layer has a smaller average pore size, P10/[0008]/(1); wherein the first layer has an average pore size of 3 to 10  $\mu\text{m}$  (P3/Claim 2 & P11/[0009]/L3) and the second layer has an average pore size of 0.1 to 2  $\mu\text{m}$  (P4/Claim 3 & P11/[0009]/L11-12). As such, said limitations have been implicitly disclosed. In addition, it would have been obvious to one having ordinary skill in the art at the time the invention was made to alter the membrane property (i.e., density) to modify, such as, filtering components and flow rates, to meet the experimental needs. It is noted that as the density,

Art Unit: 1773

porosity, pore size, thickness are variables that can be modified, among others, by adjusting said density of the membrane the precise coating thickness would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed density cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the density of the membrane of to obtain the desired operation efficiency (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

Appellants argue that the Japanese publication fails to teach the first and second layers constitute a single membrane portion formed by a single casting operation. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the layers integrally to ease handling of the device. It is noted that the use of a one piece construction instead of the structure disclosed in prior art would be merely a matter of obvious engineering choice., see In re Larson, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965) & MPEP 2144. In addition, regarding limitations recited above, which are directed to method of making the single membrane (e.g., “formed by a single casting operation”), it is noted that said limitations are given little patentable weight in the product claims. Even though a product-by-process is defined by the process steps by which the product is made, determination of patentability is based on the product itself and does not depend on its method of production. In re Thorpe, 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). As the court stated in Thorpe, 777

Art Unit: 1773

F.2d at 697, 227 USPQ at 966 (The patentability of a product does not depend on its method of production. In re Pilkington, 411 F.2d 1345, 1348, 162 USPQ 145, 147 (CCPA 1969). If the product in a product-by-process claim is the same or obvious as the product of the prior art, the claim is unpatentable even though the prior art product was made by a different process.). See MPEP 2113 and 2114. Therefore, since the membrane as recited in claims 1 and 6 is the same as the membrane disclosed by Tatebe et al., as set forth above, the claim is unpatentable even though it was made by a different process. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983). With respect to the resultant product of stacked two layers has a discontinuity, the reference teaches that two layers may be bonded together with an adhesive or may be fusion-bonded with each other ([0027]). As taught by the reference, once two layers are bonded with adhesive or fusion-bonded together, the layers would form a "single membrane".

Appellants argue that section density was not discussed in the Japanese publication, therefore can not be a variable which achieves a recognized result. As noted above, since the reference teaches the average of a layer, a sectional density would be within the average of the entire layer.

Appellants argue that glossiness was not discussed in the Japanese publication, therefore can not be a variable which achieves a recognized result. It is noted that since the reference utilizes optical measurement (e.g., spectrophotometer, P25/[0038]/L5) and light reflection absorbance at the surface of the membrane (P25/[0038]/L7-P26/[0038]/L1) are measured, where the results are determined by change in reflection, one of ordinary skill in the art would consider glossiness & reflectivity of the surface so as to reduce noise and optimize optical measurements. Therefore the surface glossiness or the surface reflectivity is a variable that can be modified,

Art Unit: 1773

among others, by varying the surface of the material used. For that reason, the surface, and membrane material, would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the surface glossiness cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the membrane in the apparatus of Tatebe et al. to obtain the desired surface glossiness according to JIS Z8741 not higher than 11 (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

Appellants argue that the ratio between the average pore size in the surface of the first layer and the average pore size in the surface of the second layer was not discussed in the Japanese publication. The reference teaches that the ratio between the first and the second layer's pore size is in the range of 1 to 6 as disclosed in P11/[0009].

#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/D. K./  
Examiner, Art Unit 1773

/Jill Warden/  
Supervisory Patent Examiner, Art Unit 1773

Art Unit: 1773

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